IN THE CLAIMS:

Please delete all claims and add the following new claims:

13. (New) A method for controlling access to a resource that may be shared by a plurality of users, which resource has an associated lock and the lock having an associated state, comprising the steps of:

when a user U_a of said users wishes to initiate access

said user sending to said lock command X that includes a tuple $(0,B_a)$, where B_a uniquely identifies user U_a;

when said lock receives said command X and said state of said lock is 0, said lock, which is a match-and-set lock that changes its state to a second term of an applied tuple only when a first term of the applied tuple matches its state, sets its state to B_a, and grants to said user access to said resource;

when said users wishes to terminate access,

said user sending to said lock command Y that includes a tuple $(B_a,0)$; and

when said lock receives said command Y, and said state of said lock is B_a, said lock sets its state to 0, and releases said resource for access by any of said users.

14. The method of claim **13** where B_a includes an identifier, P_a, that uniquely identifies said user, and a time stamp, T_a, that is a time pertaining to said user.

15. The method of claim **14** where is B_a is such that both P_a and T_a can be derived from B_a.

16. The method of claim **15** wherein, when said user wishes to initiate access, prior to said user sending to said lock said first command, said user obtains from said lock said state of said lock, and proceeds with said step of sending said first command only when said state of said lock is 0.

17. The method of claim **16** wherein, when said user wishes to initiate access, obtains said state of said lock, and said state of said lock B_i is other than 0 or B_a, said user proceeds with the following steps:

derives value P_i and T from said state;

obtains value T_i that pertains to said user P_i;

if T not equal T_i, sends command Z to said lock, which comman includes tuple (B_i,B_a).

18. The method of claim **17** where B=P+T*N, where P is a number less then N.

19. The method of claim **18** where deriving P_i from B_i comprises expressing B_i modulo N, and deriving T from B_i comprises dividing B_i to obtain a remainder that includes an integer value, and setting T to the integer value.

20. The method of claim **14** where B=P+T(N), where P is a number less then N.

21. The method of claim **13** where said user is a process.

22. The method of claim **13** where said users are processes of a multiprocessor computer system.

23. The method of claim **13** where said users a processors of a multiprocessor computer system.

24. The method of claim **13** where said users are processes of a single multi-processing computer.